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Lessons Learned on Coding Practices for Science Software

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Objective

- To develop a set of suggested software practices
  - based on the lessons learned from other NASA and government development efforts
  - which promote life cycle costs
  - for science software developers
    - to ease integration with ECS
    - to aid execution efficiency within the ECS environment
- To organize the document to accomodate multiple points of view of the readers
  - software goals
  - software practices
  - lessons learned

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Approach

- Gather lessons learned in science software integration from other NASA and government projects.
- Gather lessons learned in software porting of C and Fortran code under Unix from several sources.
- Develop suggested programming practices which reflect the gathered lessons learned. Show traceability.
- Specify which practices are reflected in the ESDIS Standards and Guidelines.
- Categorize and organize the suggested practices in prioritized terms of software goals such as portability, maintainability, useability, reuseability, and adaptability.
- Survey COTS and other tools which support the resulting suggested programming practices.
- Present initial results as a white paper. Convert white paper to hypertext format for community availability.

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Status

- White paper was delivered to ESDIS 9/95.
- Final ESDIS review is nearly complete.
- Hypertext version has been developed.

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Next Steps

- **Incorporate final ESDIS comments into both the white paper and hypertext versions.**
- **Announce document availability to the community of science software developers by December 31, 1995.**
- **Encourage user feedback to ensure a living document.**